

Patent Application of
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for
THREADED ATTACHMENT

Background—Field of Invention

This invention relates to a threaded attachment that can be applied to the external surface of a variety of shapes such as tubes, rods, cables, and the like. The threaded attachment can be spread apart, then closed around and adhered to the tube, rod, or cable, thereby providing an external threaded section to the tubes, rods or cables.

Background—Description of Prior Art

Some present methods of applying a threaded member to the outside of a tube, rod or cable, involve producing a threaded sleeve by machining, molding, casting or similar processes. The threaded sleeve is then installed over one end of the tube and slid to a desired position. After which the threaded sleeve is soldered, brazed, welded or otherwise secured in place. Using this technique requires that there can be no obstructions (such as bends, fittings, etc) in the path the threaded sleeve would take when being moved to its desired location. The processes described are costly and time consuming.

They cannot be applied to a pipe, for example, that has permanently attached end fittings after the end fittings are installed.

Present Invention—Objects and Advantages

The threaded attachment of the present invention can be installed anywhere along the length of a tube, rod or cable. It can be installed quickly, without special tools or special processes. There is no necessity of sliding the threaded attachment along the tube. The unit can be installed precisely at the desired site. The threaded attachment is inexpensive to manufacture and simple to install. No skilled techniques such as brazing or welding are required.

Drawing Figures

Fig 1 shows three orthogonal views of the invention.

Fig 2 shows the invention installed on a tube and the expansion for the installation process.

Fig 3 shows notches in the threads of the invention.

Fig 4 shows notches and a flange incorporated into the invention.

Fig 5 shows a typical use of the invention to position a panel.

Fig 6 shows the use of the invention on tubes or rods that are not round.

Description

Fig 1 shows a preferred embodiment of the present invention. Threaded attachment **10** consists of a sleeve **12** generally cylindrical. On the outside diameter of sleeve **12** is a helical thread **14** extending in depth to root diameter

16. Adhesively attached to the inside diameter 18 of sleeve 12 is an adhesive liner 20. A peel-off strip 22 may be applied to the inside diameter of adhesive liner 20. Longitudinal gap 24 is provided for the length of sleeve 12 to allow the sleeve 12 to be spread apart. Sleeve 12 is made of appropriate flexible material such as flexible plastic.

Fig 2 shows a typical installation of threaded attachment 10 around tube 26. The right hand view shows sleeve 12 spread apart sufficiently to accept tube 26. The center view shows sleeve 12 compressed and concentrically adhered to tube 26 by virtue of the adhesive properties of liner 20. In a preferred embodiment, adhesive liner 20 is constructed with aggressive adhesive applied to both of its sides. Hence, sleeve 12 is permanently attached to tube 26 by the bonding action of liner 20.

Fig 3 shows a plurality of notches 30 that extend from the major diameter of the helical threads 14 to approximately the root diameter 16 of threads 14. These notches 30 improve the flexibility for spreading threaded attachment 10 over tube 26 (Fig 2).

In a further embodiment of the invention, as in Fig 4, a flange 32 is shown as part of sleeve 12. Notches 30 are included in flange 32. Gap 24 also extends through flange 32.

Fig 5 shows a typical use of this invention. Threaded attachment 10 is attached to the end of tube 26 so that the end of tube 26 is flush with the exterior side of flange 32. Liner 20 adhesively bonds sleeve 12 to tube 26. Panel 34 fits over the helical threads 14 of sleeve 12 and abuts the interior surface of flange 32. A nut 36 engages the helicoil threads 14 and can be tightened to secure panel 34 to flange 32, and hence, to tube 26. This assembly can then be used to support panel 34 as either a pedestal or a hanger, such as in hanging ceiling tiles or fabrication of shelving. Many other applications for this invention exist.

In Fig 6, sleeve **12** and liner **20** are configured to fit over a hexagon shaped rod or tube. Many other shapes can be accommodated.

Other systems of obtaining adhesion between the sleeve **12** and the tube **26** are effective. For example, instead of using the double backed tape liner **20**, the inside surface of sleeve **12** can be coated directly with an adhesive.

Conclusions:

Accordingly, this invention offers a simple and inexpensive way to apply threads to tubes, rods, cables, and the like. The installation can be rapidly accomplished and requires very little operator skill. The threaded attachment can be easily mass-produced. For these reasons the unit will find acceptance by the novice user.

It will be appreciated that while particular embodiments of the invention have been shown and described, modifications may be made. It is intended in the claims to cover all modifications that come within the true spirit and scope of the invention.